



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,041	01/11/2001	Livio Tenze	IT 000003	2219

24737 7590 11/21/2003

PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
P.O. BOX 3001  
BRIARCLIFF MANOR, NY 10510

EXAMINER
----------

PATEL, KANJIBHAI B

ART UNIT	PAPER NUMBER
----------	--------------

2625

DATE MAILED: 11/21/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/759,041

Applicant(s)

TENZE ET AL.

Examiner

Kanji Patel

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, and 8-11 is/are rejected.
- 7) ☒ Claim(s) 3, 5-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

2. Drawings filed on 1/11/01 have been approved by the examiner.

### ***Specification***

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### ***Arrangement of the Specification***

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

- (k) **SEQUENCE LISTING** (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### **Abstract**

4. The abstract is objected because of the following informalities:

The abstract should be limited to a **single paragraph** on a separate sheet within the range of 50 to 150 words.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1 and 8-11** are rejected under 35 U.S.C. 102 (b) as being anticipated by Heimburger et al. (hereinafter referred as Heimburger) (US 5,490,094).

**For claims 1, 10 and 11**, Heimburger discloses a method and apparatus of noise filtering (figures 1-4) comprising:

estimating a type of noise in the signal (column 1 lines 20-34; a local noise value is estimated within a sliding window of a picture; the calculation of the weighted average includes also a global type of noise);

enabling one of at least two noise-filtering operations, the enabled noise filtering operation being a most suitable noise filtering operation for the estimated type of noise

(Heimbürger provides different kind of filters, such as DMF, MED, AV as shown in figure 4 and explained at least in column 3 line 45 to column 4 line 26).

**For claim 8**, Heimbürger discloses the method of noise filtering wherein the noise in the signal is approximated by a difference between the signal and a noise-filtered version of the signal (see in figure 4, SUB 1, 3 and 5 provide the noise approximation in the signal).

**For claim 9**, Heimbürger discloses the method of noise filtering wherein the noise-filtered version of the signal is obtained by subjecting the signal to a median filtering operation (see at least figure 4).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claim 2** is rejected under 35 U.S.C. 103 (a) as being unpatentable over Heimbürger et al. (hereinafter referred as Heimbürger) (US 5,490,094) as applied to claims 1 and 8-11 above and further in view of Francesco Cocchia et al. (Design and Real-Time Implementation of a 3-D rational Filter for Edge Preserving Smoothing – IEEE 1997, pages 408-409).

For claim 2, Heimbürger discloses a median filtering operation as shown in figure 4 and explained at least in column 2, line 39 to column 3 line 4 but he fails to disclose explicitly a spatio-temporal rational filtering operation if the estimated type of noise is Gaussian noise or contaminated Gaussian noise. However, in an analogous environment, Francesco Cocchia et al. discloses a design and real time implementation of a rational filter for edge preserving smoothing comprising a spatio-temporal rational filtering operation if the estimated type of noise is Gaussian noise or contaminated Gaussian noise (see at least abstract, figure 1, experimental results on page 409). Therefore, it would have been obvious to one of ordinary skill in the art to modify Heimbürger by including a spatio-temporal rational filtering operation if the estimated type of noise is Gaussian noise or contaminated Gaussian noise. It would have been obvious to one of ordinary skill in the art to modify Heimbürger by the teaching of Francesco Cocchia et al. in order to effectively remove the noise, while the sharpness of the image is left unaffected as explained by Francesco Cocchia et al. on page 409.

7. **Claim 4** is rejected under 35 U.S.C. 103 (a) as being unpatentable over Heimbürger et al. (hereinafter referred as Heimbürger) (US 5,490,094) as applied to

claims 1 and 8-11 above and further in view of S.Pagnan et-al. (Filtering of randomly occurring signals by kurtosis in the frequency domain--- IEEE 1994, pages 131-133).

**For claim 4**, Heimburger differs in that he does not explicitly disclose a kurtosis of the noise is used as a metric for estimating the type of noise. However, S. Pagnan et al. disclose a filtering of randomly occurring signals by Kurtosis in the frequency domain as explained in abstract and also sections 1-2. Therefore, it would have been obvious to one of ordinary skill in the art to use S. Pagnan et al.'s teaching to modify Heimburger for the purpose of reducing noise variance and amplifying narrow band transient signals.

***Allowable Subject Matter***

**8. Claims 3, 5-7** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**For claim 3**, the prior art on record fails to teach or suggest, alone or in combination for enabling a first temporal filtering operation if the estimated type of noise is Gaussian noise; and enabling a second temporal filtering operation if the estimated type of noise is contaminated Gaussian noise, the first temporal filtering operation taking into account at least one temporal direction and the second temporal filtering operation taking into account at least one combination of a temporal direction and a spatial direction.

**Claims 6 and 7** depend from the objected claim 3 above and therefore they are objected for the same reasons.

**For claim 5**, the prior art on record fails to teach or suggest, alone or in combination, the rational noise filtering operation is enable if the kurtosis is below the first threshold.

**Other prior art cited**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dwyer (US 4,530,076) discloses a frequency domain non-linear signal processing apparatus and method for discrimination against non-Gaussian interference.

Tran et al. (US 6,249,749 B1) discloses a method and apparatus for separation of impulsive and non-impulsive components in a signal.

Napier (US 5,057,795) discloses a digital Gaussian white noise generation system and method of use.

Hwang (US 5,379,074) discloses a multilevel nonlinear filter for edge detection and noise suppression.

Kenyon (US 5,210,820) discloses a signal recognition system and method.



**Contact information**

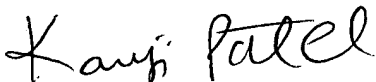
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kanji Patel** whose telephone number is (703) 305-4011.

The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 6:30 p.m. Friday off.

If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, **Mehta, Bhavesh**, can be reached on (703) 308-5246.

Any inquiry of general nature or relating to the status of this application should be directed to the **Group receptionist** whose telephone number is (703) 305-3800.

The **Fax number** for this group is (703) 306-9306.



Kanji Patel  
Patent Examiner  
Group Art Unit 2625  
November 14, 2003